

**APPENDIX B**



THE GLOBAL LEADER IN SPECIALTY COMPOUNDING

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## STYRENIC BLOCK COPOLYMER THERMOPLASTIC ELASTOMER (SBC / TES)

### Advantages

1. Stress-strain behavior is more like thermoset rubber than any other TPE
2. Dynamic hysteresis is also more like thermoset rubber than any other TPE
3. Low compression set within their design temperature range
4. Generally lower and broader hardness range than other TPEs.
5. Low specific gravity
6. Superior resistance to oxidation and UV radiation compared to unsaturated styrenic block copolymers

### Limitations

1. Poor resistance to hydrocarbons
2. Must be compounded
3. Low upper service temperature limit

### Overview

At ambient temperatures, styrenic block copolymers (SBCs) are more "rubber-like" than any other thermoplastic elastomers. All SBCs have good chemical resistance to water, acids and bases, and polar solvents but poor resistance to hydrocarbon based oils, fuels and solvents.

Saturated styrenic block copolymers are the "value-added" member of the styrenic block copolymer family. They exhibit better oxygen, ozone, UV radiation, and general chemical resistance than the unsaturated versions. Additionally, they have a higher tensile modulus and exhibit a less dramatic loss of tensile properties at elevated temperatures. Service temperatures range from -50 to 230 degrees F (-45 to 110 degrees C). Hardness ranges from 30 Shore A to 50 Shore D.

RTP Technologies that can be applied to saturated styrenic block copolymer thermoplastic elastomers include: custom colors, specific gravity adjustment, anti-static and conductivity modification, flame retardancy, UV resistance, anti-microbial enhancements, wear resistant lubrication, and modified substrate adhesion for overmolding.

### ADDITIONAL INFORMATION

- DATA SHEETS: [RTP 2700 Series styrenic block copolymer thermoplastic elastomer compounds physical properties](#)
- CASE STUDIES: [Applications using styrenic block copolymer thermoplastic elastomer compounds](#)

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